

The Krebs Cycle

Fill in the molecules created or released during the Krebs cycle. Fill in the blanks of the summaries.

Pyruvate Oxidation

_____ enters the mitochondrion from the cytoplasm.

One _____ atom is removed via _____ and

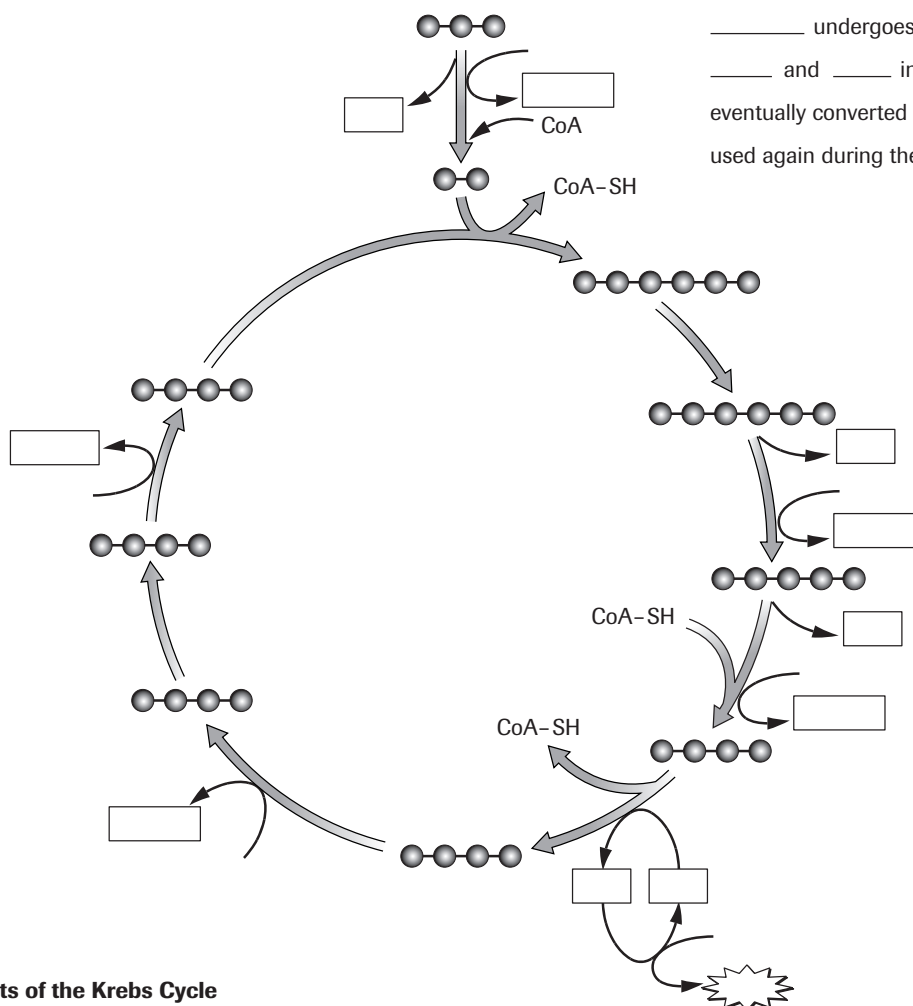
_____ is removed using _____. _____

becomes attached to the remaining _____ atoms,

creating _____, which then enters the Krebs cycle.

Krebs Cycle

_____ enters the cycle and then combines with _____ to make the six-carbon compound _____. During the eight steps of the Krebs cycle, _____ undergoes a number of reactions, releasing _____ and _____ in a number of steps. _____ is eventually converted into _____ so it can be used again during the Krebs cycle.



Products of the Krebs Cycle

- _____ is released as waste.
- _____ and _____ move to the next stage of cellular respiration.
- Energy is released in the form of _____. A glucose molecule produces _____ molecules of _____ because two molecules of _____ are created from each molecule of _____.

The Krebs Cycle, Solution

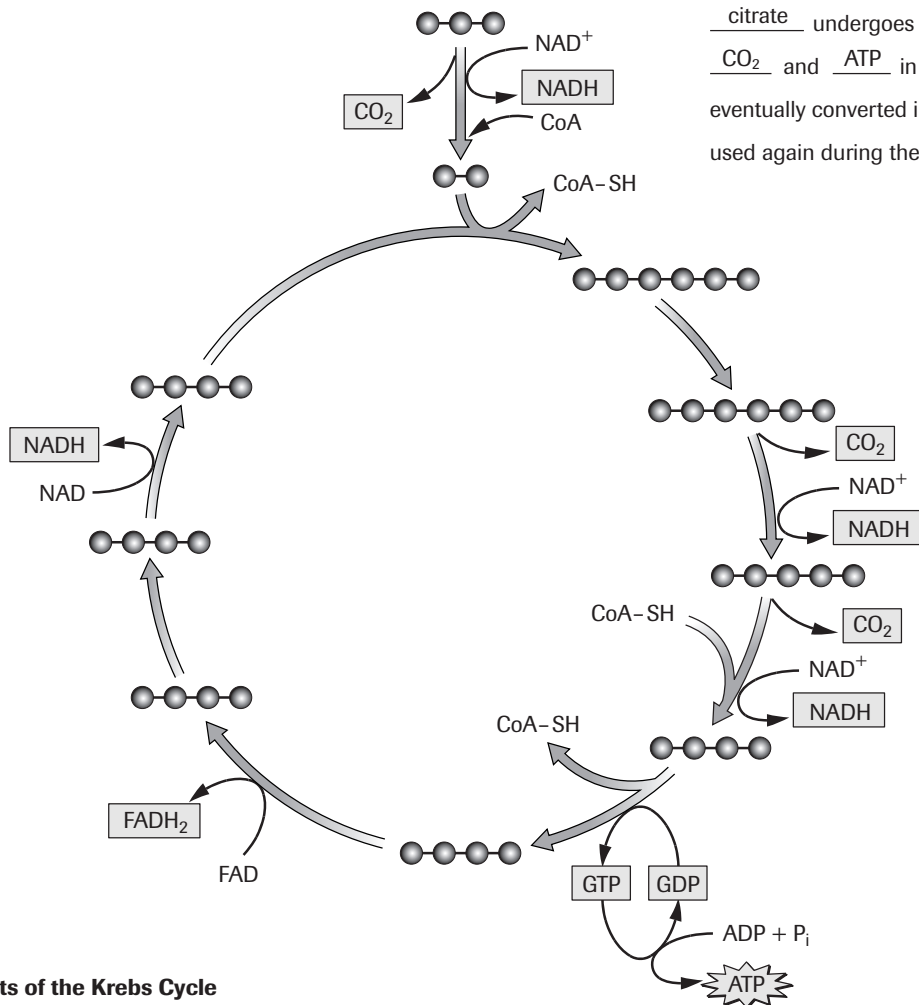
Fill in the molecules created or released during the Krebs cycle. Fill in the blanks of the summaries.

Pyruvate Oxidation

Pyruvate enters the mitochondrion from the cytoplasm.
One carbon atom is removed via decarboxylation and
hydrogen is removed using NAD⁺. Coenzyme A
becomes attached to the remaining carbon atoms,
creating acetyl-CoA, which then enters the Krebs cycle.

Krebs Cycle

Acetyl-CoA enters the cycle and then combines
with oxaloacetate to make the six-carbon compound
citrate. During the eight steps of the Krebs cycle,
citrate undergoes a number of reactions, releasing
CO₂ and ATP in a number of steps. Citrate is
eventually converted into oxaloacetate so it can be
used again during the Krebs cycle.



Products of the Krebs Cycle

1. CO₂ is released as waste.
2. NADH and FADH₂ move to the next stage of cellular respiration.
3. Energy is released in the form of ATP. A glucose molecule produces two molecules of ATP because two molecules of pyruvate are created from each molecule of glucose.